

Application No. 10/589,274  
Paper Dated: April 5, 2010  
Attorney Docket No. 1455-062312

**AMENDMENTS TO THE DRAWINGS**

The attached Replacement Sheet includes changes to Fig. 5. This sheet, which includes Figs. 4-6, replaces the original sheet including Figs. 4-6.

Attachment: Replacement Sheet  
Annotated Sheet Showing Change

**REMARKS**

Applicants thank the Examiner for the courtesies extended during the interview conducted on February 22, 2010. During the interview, the Examiner agreed that amending independent claim 1 to recite that piping extends from the connection of the piping for the compressed gas tank and the piping for the cooling water storage tank to retention tank would define over the cited prior art. Further, the Examiner agreed that amending the claim to remove the language reciting “under pressure” would overcome the rejections under 35 U.S.C. § 112, first and second paragraph.

This Amendment is responsive to the January 5, 2010 Office Action. Claims 1 and 7, the specification, and the drawings have been amended. Support for the claim amendments may be found, for example, in Fig. 3 and in the specification at page 4, paragraph [38] to page 5, paragraph [40]. Support for the amendment to the specification and Fig. 5 may be found, for example, in the specification at page 6, paragraph [52].

**Objection to the Drawings**

The drawings are objected to for failing to show “an outer retention vessel having at least one coolant hole formed in a side or bottom thereof” as specified in claim 2. The Examiner, at page 2 of the Office Action, asserts that the amendment to Fig. 5 to show a coolant hole (21a) in the bottom of the outer retention vessel introduces new matter, because the coolant hole (21a) is shown in a specific location in the bottom whereas the specification only generically mentions the location of the hole.

Applicants have amended Fig. 5 to show a coolant hole in the bottom surface of the retention vessel, which is provided in dashed lines. Further, the specification has been amended to clarify that the coolant hole in the bottom surface of the retention vessel is shown in dashed lines to generally indicate that the bottom surface may include a hole rather than indicating a specific location for the hole. Applicants respectfully submit that the amendments to Fig. 5 and to the specification do not add new matter. Reconsideration and withdrawal of this objection are respectfully requested.

*Rejection Under 35 U.S.C. § 112, first paragraph*

Claims 1-3 and 5-9 stand rejected under 35 U.S.C. § 112, first paragraph, for failing to comply with the written description requirement. Claims 1-3 and 5-9 also stand rejected under 35 U.S.C. § 112, first paragraph, for lack of enablement. In view of the foregoing claim amendments to remove the term “under pressure” as suggested by the Examiner, Applicants respectfully submit that claim 1-3 and 5-9 meet the written description and enablement requirements pursuant to 35 U.S.C. § 112, first paragraph. Reconsideration and withdrawal of these rejections are respectfully requested.

*Rejections Under 35 U.S.C. § 112, second paragraph*

Claims 1-3 and 5-9 stand rejected under 35 U.S.C. § 112, second paragraph, for indefiniteness. The Examiner asserts that the claims are inconsistent with the specification with respect to the pressure at which the inert gas is supplied, the pressure of the gas prevented from back flowing, and the layer of sacrificial and water tight material cemented on a surface of the protection vessel. In view of the foregoing claim amendments to remove the term “under pressure” as suggested by the Examiner, Applicants respectfully submit that claim 1-3 and 5-9 are sufficiently clear pursuant to 35 U.S.C. § 112, second paragraph. Reconsideration and withdrawal of these rejections are respectfully requested.

*Rejections Under 35 U.S.C. § 103*

Claim 1 stands rejected under 35 U.S.C. § 103(a) for obviousness over either one of U.S. Patent No. 5,309,489 to Tate et al. (hereinafter “Tate”) alone or U.S. H91 to Gabor et al. (hereinafter “Gabor”) alone or U.S. Patent No. 6,658,077 to Alsmeyer et al. (hereinafter “Alsmeyer”) in view of Gabor. Claims 2, 3, and 7 stand rejected under 35 U.S.C. § 103(a) for obviousness over either one of Gabor alone or the combination of Alsmeyer and Gabor. Claim 6 stands rejected under 35 U.S.C. § 103(a) for obviousness over the combination of Alsmeyer and Gabor. Claims 8 and 9 stand rejected under 35 U.S.C. § 103(a) for obviousness over Tate. Claim 5 stands rejected under 35 U.S.C. § 103(a) for obviousness over Gabor alone or the

combination of Alsmeyer and Gabor in further view of U.S. Patent No. 6,192,097 to Hau et al. (“Hau”) or U.S. Patent No. 6,353,651 to Gou et al. (“Gou”). In view of the foregoing amendments and the following remarks, reconsideration of these rejections is respectfully requested.

Amended independent claim 1 recites, *inter alia*:

...a mixer including piping connecting to and extending from each of the compressed gas tank and the cooling water storage tank, the piping from the compressed gas tank and the piping from the cooling water storage tank being connected, thereby mixing inert gas supplied from the compressed gas tank with cooling water supplied from the cooling water storage tank, wherein further piping extends from the connection between the piping for the compressed gas tank and the piping for the cooling water storage tank to the molten core material retention tank thereby supplying the cooling water/inert gas mixture to the molten core material retention tank.

The cited references fail to disclose or suggest a mixer including piping connecting to and extending from each of the compressed gas tank and the cooling water storage tank and further piping extending from the connection between the piping for the compressed gas tank and the piping for the cooling water storage tank to the retention tank as recited in amended independent claim 1. As shown in Fig. 3 of the present application, for example, the mixer (50) includes piping that extends from the compressed gas tank (30) and from the cooling water storage tank (40) with the respective piping being connected and further piping extending to the retention tank (20).

With respect to Tate, the Examiner asserts at page 4 of the Office Action that the piping (24) and the piping (22) are indirectly connected to each through the pressure vessel (2) and the inert gas from the accumulator tank (20) and the coolant from the suppression chamber (12) will inherently flow towards the containment sump. The Examiner contends that inert gas would be inherently mixed with, carried by, or entrained with the fluid in the accumulator tank (20). With respect to Gabor, the Examiner, at page 6 of the Office Action, asserts that the piping for the inert gas and the piping for providing the cooling water to the porous bed are indirectly connected to each other through the pressure vessel and, therefore, the device of Gabor discloses all of the claimed limitations. The devices of Tate and Gabor, however, fails to disclose or

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suggest further piping extending from the connection between the piping for the compressed gas tank and the piping for the cooling water storage tank to the molten core material retention tank to supply a cooling water/inert gas mixture to the molten core material retention tank as recited in amended independent claim 1. Alsmeyer, Hau, and Gou fail to overcome the deficiencies of Tate and Gabor.

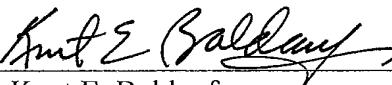
Therefore, for at least the foregoing reasons, the cited references fail to render independent claim 1 obvious. Reconsideration and withdrawal of this rejection are respectfully requested.

Claims 2, 3 and 5-9 depend from and add further limitations to independent claim 1 and are deemed to be in condition for allowance for all the reasons discussed above with respect to independent claim 1.

### CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration of the objections and rejections and allowance of pending claims 1-3 and 5-9.

Respectfully submitted,  
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